

What is claimed is:

1. A discharging apparatus for a combination battery, comprising:
a discharging circuit, including at least one voltage drop element and
5 a discharge switch being serially connected, for discharging a secondary
battery serving as a constituent battery of a combination battery to reduce
voltage differences among respective secondary batteries of said
combination battery;
a voltage detecting circuit for detecting a terminal voltage of said
10 secondary battery via said voltage drop element; and
a discharging circuit failure judging section for judging a failure
occurring in said discharging circuit based on a difference or a ratio in a
comparison between a terminal voltage value detected when said discharge
switch is turned on and a terminal voltage value detected when said
15 discharge switch is turned off, which are time sequentially detected.
2. The discharging apparatus for a combination battery in accordance
with claim 1, wherein said discharging circuit failure judging section cancels
the failure judgment or abandons test result when an output voltage change
20 of said voltage detecting circuit or a charge/discharge current of said
combination battery is larger than a predetermined value.
3. The discharging apparatus for a combination battery in accordance
with claim 1, wherein said discharging circuit failure judging section
25 restricts charge/discharge of said combination battery when an operation test
is performed.
4. The discharging apparatus for a combination battery in accordance
with claim 1, wherein said discharging circuit failure judging section judges
30 that said discharging circuit is in a ON failure condition when the difference

between the terminal voltage value detected when said discharge switch is turned on and the terminal voltage value detected when said discharge switch is turned off is less than a predetermined value and said two terminal voltages are less than a predetermined value.

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5. The discharging apparatus for a combination battery in accordance with claim 4, wherein said discharging circuit failure judging section prohibits said discharge switch from turning on in an event that said ON failure condition of said discharging circuit is detected.

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6. The discharging apparatus for a combination battery in accordance with claim 1, wherein said discharging circuit failure judging section judges that said discharging circuit is in an OFF failure condition when the difference between the terminal voltage value detected when said discharge switch is turned on and the terminal voltage value detected when said discharge switch is turned off is less than a predetermined value and said two terminal voltages are equal to or larger than a predetermined value.

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7. The discharging apparatus for a combination battery in accordance with claim 1, wherein said discharge switch serves as one of two voltage drop elements.

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8. The discharging apparatus for a combination battery in accordance with claim 1, wherein said combination battery consists of lithium-group secondary batteries.

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9. The discharging apparatus for a combination battery in accordance with claim 1, wherein said discharging circuit failure judging section executes the failure judgment when an ignition switch is turned off.